Claims

1. Pattern blocks in a tread of a vehicle tyre, comprising a tread layer (20) of one or several rubber materials on a tyre carcass (25), and in this tread layer pattern blocks (1) separated from each other by wider grooves (21), and at least in part of these pattern blocks fine slits (2) substantially narrower than the said grooves, each of the slits comprising within an area (A1) of the pattern block at least one bend (5) or at least one end (4), **characterised** in that at least part of the pattern blocks (1) comprises surface tear points (10) between at least two adjacent slits (2), each of them being developed from:

- webs (3a, 3b) between an end (4) of at least one slit (2) and at least one second slit (2) or its end (4); or
- webs (3c, 3d) between the bend of one slit (2) and one second slit (2) or its bend (5); and that

– the web width (W3) of the said webs (3a-3d) is at most five times the slit width (W2) of the slit (2); and that

– the adjacent slits (2) restrict between their mutual webs (3a-3d) between themselves internal nubs (8) inside the pattern block (1).

2. Tread according to claim 1, **characterised** in that said at least two adjacent slits (2) both contain two bends (5), which open substantially to opposite directions in a single slit; and that in the pattern block such slits (2a) of a first type are located two or several interlaced in a row (18) in uniform positions, forming webs (3a) of a first type so that a principal directions (D7) of intermediate sections (7) between the two bends (5) of the slits are either parallel or gradually changing their direction in a fan-like manner.

3. Tread according to claim 2, **characterised** in that the principal directions (D7) of said intermediate sections (7) form an angle of deflection (α) in relation to the constant or changing local row direction (D1), the angle of deflection being between 30° - 90°.

4. Tread according to claim 1, **characterised** in that said at least two adjacent slits (2) both contain one bend (5); that in the pattern block such slits (2b) of a second type are located in pairs along the row (18), the slits in the slit pairs (11) being arranged interlaced and mirror-like forming webs (3a) of a first type.

5. Tread according to claim 1, **characterised** in that said at least two adjacent slits (2) both contain two bends (5), which open principally to the same direction in the single slit; and that in the pattern block such slits (2c) of a third type are located alternately interlaced and mirror-like in the row (18), forming webs (3a) of a first type so that the average directions (D7) of the intermediate sections (7) between two bend points in the slits are parallel with each other and with the constant row direction (D1) of the row.

6. Tread according to claim 1, **characterised** in that said at least two adjacent slits (2) both contain one bend (5); that in the pattern block such slits (2b) of a second type are located in pairs in row, the slits in the slit pairs (12) being opposed mirror-like and forming webs (3b) of a second type and/or webs (3c) of a third type; and that in the row (18) between the slit ends (4) of the successive slit pairs (12) there is said web width (W3) so that web combinations (9) between the slit pairs or webs (3b) of the second type are formed.

7. Tread according to claim 1, **characterised** in that said at least two adjacent slits (2) both contain three or several bends (5), which open alternately substantially to opposite directions; that in the pattern block such slits (2d) of a fourth type are present in pairs, the slits in these slit pairs (12) being opposed and mirror-like so that the bends (5) at a distance of the web width (W3) from each other form webs (3c) of a third type, which are in a row (18) respective to the principal direction of the slits.

8. Tread according to claim 1, **characterised** in that of said at least two adjacent slits (2) one is either the slit (2b) of a second type including one bend point opening towards the second slit, or the slit (2d) of a fourth type including three or several bend points opening alternately substantially to opposite directions; that the second slit (2e) of a fifth type is principally straight; and that the ends (4) of the slit of the second type or the bends (5) of the slit of the fourth type are arranged at a distance of the web width (W3) from the slit (2e) of the fifth type, forming a row (18) of the webs (3a) of the first type and webs (3d) of the fourth type, respectively, along the slit of the fifth type.

9. Tread according to claim 1, **characterised** in that said at least two adjacent slits comprise four principally straight slits (2e) of a fifth type, the first ends (4) of which are at a distance of the web width (W3) from each other forming first webs (3b) of a second type; that slits (2e) of the fifth type are present in pairs (13) along row so that their second ends (4) extending away from the said webs of the second type are present at a distance of the web width (W3) from each other, forming second webs (3b) of a second type; and that in the row (18) between the first webs of the second type of the successive slit pairs (13) there is the said web width (W3) so that web combinations (9) are formed.

10. Tread according to one of the preceding claims, **characterised** in that said bend (5) is alternatively either:
– an angle (5a), the sides of which are formed by the slit and from which the slit continues as straight or curved sections; or
– an arc (5b), which continues as straight sections and/or convex and/or concave sections.

11. Tread according to claim 10, **characterised** in that the angular value (β) for said angle (5a) is at least 60° and at most 120°; and that the angular value (β) for said angle is between 80° - 100°.

12. Tread according to claim 10, **characterised** in that said arc (5b) extends as a single configuration:
– to a first curvature (χ1) of at least 150° and at most 210°, or between 170° and 190° in a case in which the arc (5b) continues as sections (15a) of unchanged radius of curvature (R1); or
– to a second curvature (χ2) of at least 60° and at most 120°, or between 80° and 100° in a case in which the arc (5b) continues as substantially straight sections (15b); or
– to a third curvature (χ3) which is between the said first and second curvature (χ1, χ2) in a case in which the arc (5b) continues as sections (15c), the radiuses of curvature (R2) of which are bigger than the radius of curvature (R1) of the said arc.

13. Tread according to claim 7 or 10, **characterised** in that the radius of curvature (R3) of the said angle (5a) is at most three times the slit width (W2) of the slit.

14. Tread according to claim 1, **characterised** in that the slits (2a and/or 2b and/or 2c and/or 2d and/or 2e) extend opening to one edge (19) or two opposite edges (19) of the pattern block (1); and that these said edges of the pattern block are either parallel with the circumferential direction (Tc) of the tyre, or they form at most the angle (K1) of 45° in relation to it.

15. Tread according to claim 1, **characterised** in that the pattern block (1) contains at least five said nubs (8); that the nubs have substantial length (L1) and width (W1) both in the circumferential direction (Tc) of the tyre and in the lateral direction (Tw) of the tread; and that the said nubs (8) are present in pattern blocks on shoulder areas (Ts) of the tyre and in pattern blocks towards middle parts (Tm) of the tyre.

16. Tread according to one of the claims 2 – 9, **characterised** in that the pattern block (1) contains one, two or several said rows (18), the row direction (D1) of the rows being transverse to the circumferential direction (Tc) of the tyre; and that the row direction forms a row angle (K2) of 90° - 45° in relation to the circumferential direction.

17. Tread according to claim 1, **characterised** in that the web width (W3) of the said webs (3a-3d) is at most four times the slit width (W2) of the slit, or at most two times the slit width; and that the web width (W3) of said webs is substantially equal to the slit width (W2).

18. Tread according to claim 1, **characterised** in that the web thickness (P3) of the said webs (3a-3d) is at most three times the slit width (W2) of the slit, or at least

half of the slit width; and that the web thickness (P3) of the said webs is between 0.8× – 1.5× the slit width (W2).

19. Tread according to claim 1 or 17 or 18, **characterised** in that the web thickness (P3) and web width (W3) have been dimensioned according to the rubber material or rubber materials of the tread layer (20) so that, as the tyre is in use during driving, the web (3a-3d) tears into the depth (H1) calculated from the outer surface (22) of the tread in each case, the tear depth (H1) being substantially smaller than the slit depth (H2); and that the tear depth is at least 0.5 mm and at most 1.5 mm, or at most 1.0 mm.

20. Tread according to one of the claims 17 – 19, **characterised** in that the web width (W3) of the said webs is at most 1.5 mm and at least 0.3 mm; or the web width is between 0.5 mm – 1.0 mm; and that the web thickness (P3) of the said webs is at most 1.3 mm and at least 0.2 mm; or the web thickness is between 0.4 mm – 0.9 mm.